UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

JUN 02 2011

MEMORANDUM

SUBJECT:. Recommended Concurrence on CERCLA Section 106 Unilateral Administrative Order for Removal Action, San Mateo Mine Site, New Mexico, Proposed by United States Forest Service, Federal Land Management Agency

FROM: Samuel Coleman, P.E.,
Director
Superfund Division

TO: Elliot Gilberg, Director
Office of Site Remediation Enforcement

Introduction

This Memorandum recommends your concurrence on issuance of a Unilateral Administrative Order (UAO) for Removal Action by the U.S. Forest Service (USFS). The Removal Action is planned at the San Mateo Mine Site on USFS Land within the State of New Mexico, located in U.S. EPA Region 6. USFS technical and legal staff have been in contact with my staff over the last several months, sending over the final Engineering Evaluation and Cost Analysis and seeking review of the draft UAO, draft Action Memorandum, and other documents. Contacts at the USFS informed my staff that a concurrence package for the subject UAO was sent to your office on May 6, 2011.

Under the Office of Site Remediation Enforcement (OSRE) Roles Chart of April, 2011, OSRE requires advance written concurrence on Section 106(a) orders issued by Federal Resource Managers under Executive Order 13016 and its implementing Memorandum of Understanding (March 23, 1998). The Roles Chart calls for a recommendation from the EPA Regional Office concerning Headquarters concurrence on Section 106(a) orders from Federal Resource Managers. Region 6 recommends that you concur on issuance of the proposed order.

Background

A. Identification of Respondents

USFS proposes to issue the UAO for removal action to United Nuclear Corporation (UNC), El Paso Natural Gas Company (El Paso), Homestake Mining Company of California (Homestake), and Western Energy Development Corp (WEDC). USFS attempted negotiations with the companies for months after it issued the EECA, and although the negotiations at times appeared promising, they were not able to secure agreement to conduct the work.

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CERCLA liability of the four companies is based on their activities as operators of the San Mateo Mine located on land managed by the USFS as a federal land management agency:

1957-1964 Rare Metals Corporation began development of the mine with construction of the original mine shaft in 1957. Ore production began in 1959. Rare Metals operated the mine from 1957-1962, when it merged into El Paso Natural Gas Company. El Paso is incorporated in Delaware.

1964-1981 El Paso sold the mine to UNC in 1964, and UNC operated it until 1971, conducting minor exploration and claim assessment work until 1981. UNC is a wholly owned subsidiary of General Electric.

1981-2004 In 1981, UNC sold its interest in the mining claims to Homestake. In 1984, Homestake notified the USFS of its intent to abandon its claims and cease operations, but it continued to perform assessment work and maintain its claims through the 1988 assessment year. Homestake is a wholly owned subsidiary of Barrick Gold Corporation.

2004-present In 2004, WE DC acquired a number of claims in the area, including some on-site. WEDC is incorporated in Nevada.

B. Site Location and Description

The San Mateo Mine Site is located on the Cibola National Forest in Cibola County about 15 miles northeast of Grants, New Mexico and about 5.5 miles west of the village of San Mateo near Mt. Taylor. There are tribal interests located near the site, including the Pueblo of Sandia, Jicarilla Apache Nation, Hopi Tribe, Navajo Nation, Pueblo of Acoma, Pueblo of Jemez, Pueblo of Laguna, and Pueblo of Zuni.

The Site is an inactive uranium mine. Uncovered and uncontrolled waste rock and contaminated native soils are situated within the boundaries of the Cibola National Forest on land administered by the USFS under the jurisdiction of the Mt. Taylor Ranger District. Some mine waste has migrated onto adjacent private lands, including the Schmitt Ranch approximately 2.5 miles northwest of the mine.

The Site is located on the northern flank of La Jara Mesa on a gentle slope at approximately 7,100 ft. above mean sea level (amsl), between the mesa top and San Mateo Creek. La Jara Mesa ranges from 8,000 to 8,300 ft. amsl, with steep cliffs on the western and southern sides, capped by tertiary basalt flows from nearby Mt. Taylor (11,305 ft. amsl). North of the Site, San Mateo Creek flows during wet weather in a broad alluvial valley at elevations below 7,000 ft. Surface runoff from the Site flows into an unnamed ephemeral tributary which enters San Mateo Creek ½ mile north of the Site. San Mateo Creek flows to the west and then south into Blue Water Creek and Rio San Jose.

The primary exposure pathway at the Site is direct exposure (primarily to external gamma radiation) to waste rock, pad material and surface soil/sediment contaminated with radionuclides and toxic metals. Significantly elevated levels of gamma radiation measured over the waste rock pile and north pad at the Site confirm that these are the two primary areas of radiation contamination. Earlier investigations also found elevated levels of selenium, molybdenum, radium-226, and gross alpha activity. In addition, sampling results indicate that the radioactive contamination is being transported away from the Site via runoff and surface water flow mobilized via precipitation and surface water.

C. Site History and Operations

The San Mateo uranium ore body was delineated by drilling in 1957; initial estimate of reserves were 840,000-2,200,000 tons. The first ore was shipped in 1959 and production continued sporadically until at least 1971. Minor exploration and assessment work continued until 1984.

Uranium ore was mined from an 8-ft. thick deposit in the Brushy Basin Sandstone about 1057 below ground surface (bgs). Surface facilities consisted of a head frame with a hoist and ore bin structure, warehouse, employee change room, office building, machine shop and hoist, power plant building, mine waste dump, settling ponds, and access roads. A warehouse building near the shaft opening housed cable drums that activated the skip cages. The shaft included a pump at 900 ft. bgs to remove water. After drilling and blasting the mine stopes, ore was moved to the draw point, allowed to fall into ore cars in the lower level, and hauled to the ore loader at the bottom of the shaft. When ore was brought to the surface, it was unloaded and measured into trucks, which transported it to a uranium processing mill.

Waste rock was disposed of at the mine head in a series of waste rock terraces. A pad consisting of material similar to the main waste rock pile was constructed on a flat area northeast of the main waste rock pile. This pad is referred to as the north pad or the leach pad.

Since the mine closed in 1971, all buildings and surface facilities have been removed and only small remnants of the former surface structures remain. The main shaft and any emergency or air shafts associated with the mine have apparently been sealed. Other mine features such as the mine road, waste rock pile, north pad, and several settling ponds remain at the Site.

D. Site Ownership

As noted above, the Site is located in the Cibola National Forest, managed by the USFS. There is some indication that Site contamination may be migrating onto adjacent private property.

E. Past EPA or State Activities

In August, 2010, EPA Region 6, in conjunction with a number of tribal, state and federal partners, completed a Five Year Plan to assess legacy uranium mining contamination across the Grants Mineral Belt in the northwestern quadrant of New Mexico. Investigation and response at legacy uranium sites across the State is a current priority for EPA Region 6. Approximately 97 mine and

mill sites have been preliminarily identified. EPA Region 6 is working closely with the New Mexico Environment Department, the New Mexico Mining and Minerals Division, and the Department of Interior offices in Albuquerque, New Mexico (including, inter alia, the Bureau of Indian Affairs and the Bureau of Land Management), as well as the USFS, tribal governments, and other EPA Regional offices, to determine which agency or entity should take the lead in addressing those sites which may require response. EPA Region 6 has established good working relationships with the federal land management agencies that may have a role in environmental response at sites identified under the Five Year Plan, but the USFS is to be particularly commended for initiating this action at the San Mateo Mine Site.

The Index to the Administrative Record supplied at Tab 4 of the May 6, 2011 USFS Request for Concurrence shows that EPA, the State, and the USFS have been in periodic contact concerning this Site beginning in the mid-1980s.

May 1988. NMED conducted a Site Discovery and Preliminary Assessment

May 1989. USFS conducted an Expanded Preliminary Assessment

January 1994. SAIC on behalf of USFS conducted a Site Inspection

March 1997. USDOI National Park Service conducted Gamma Radiation Survey

2009-2010. SAIC on behalf of USFS prepared an EE/CA.

F. Hazardous Substances/Contaminants of Concern

The primary contaminants of concern at the Site are radium-226 and thorium-230; radium-228, thorium-228, thorium-232, uranium-234, uranium-235, and uranium-238 are also of concern. The average concentration of radium-226 in soil within the source area is 136.33 pCi/g. The average concentration in soil outside the source area is 7.19 pCi/g, and the average background concentration is 1.60 pCi/g, indicating an area of elevated concentrations occurring at the Site.

Similarly, thorium-230 levels are elevated in the waste rock and north pad areas. The average concentration of thorium-230 in soil from the waste rock area is 139.10 pCi/g. The average concentration for samples outside the source area is 4.76 pCi/g, and the average background is 0.53 pCi/g.

The action level for response, drawn from the Multi-Agency Radiation Survey and Site Investigation Manual and the Uranium Mill Tailings Radiation Control Act regulations at 40 CFR 192.12, requires the concentration of radium-226 in land average over the first 15 cm of soil bgs not to exceed the background amount by more than 5 pCi/g of radium-226.

G. Imminent and Substantial Endangerment

Hazardous substances from mine waste are being released from the Site. The main waste rock

pile contains an estimated 160,000 yd3 of uncovered and uncontrolled mine waste; the north pad contains 13,000 yd3, and the sheet wash area contains 7,000 yd3. Surface soil and drainages surrounding the mining disturbances are contaminated by wind-borne dust and sediment is transported by runoff to lower elevations.

The primary exposure pathway at the Site is direct exposure to waste rock, pad material, and surface soils and sediments contaminated with radionuclides. No one lives on the Site; however, land use at the Site is unrestricted, potentially exposing humans through ingestion, inhalation, and dermal contact. Both public and local residents – hikers, hunters, ranchers, ATV riders, and four wheel drive enthusiasts -- frequent the Site for recreational purposes. Approximately six people live year round at the Schmitt Ranch 2.5 miles northwest of the Site. In addition, the Site lies within a cattle grazing allotment, and wildlife may frequent the site where radionuclides have been detected. Surface drainage through the uncovered and uncontrolled main waste rock pile and the north pad carry contaminated soil to San Mateo Creek. The exposed surfaces of these areas are also vulnerable to wind erosion, which can result in radionuclide migration through windborne dust.

H. Proposed Response Action

The Removal Action is designed to provide a comprehensive containment of surface contamination on-site. Waste rock and contaminated soils will be excavated and consolidated onto the Main Waste Rock Pile footprint, and capped with an Evapotranspiration (ET) Cover. Approximately 35 acres within areas in and around the Main Waste Rock Pile will be re-vegetated; diversion channels will be installed up-gradient of the consolidation cell to control surface water and provide for runoff protection on the ET cover; and an 8-ft. chain link fence enclosing approximately 17 acres will be installed.

Consolidation and capping of waste rock onto the main waste rock pile footprint will reduce the risk of exposure to gamma radiation and direct contact, inhalation, or ingestion of soil by covering the most contaminated surface material on the Site. This will reduce both human health and wildlife risks. Contaminant transport off-site via erosion will be minimized using enhanced surface drainage features such as re-grading the waste rock pile and installation of settling ponds along with construction of the ET cover. The area will be re-graded and re-vegetated, further reducing windblown transport of any residual contamination.

I. Findings

Based on a review of the proposed order, the Region concludes that the response action required by this order is necessary to abate an imminent and substantial endangerment to the public health, welfare, or the environment, and is not inconsistent with the NCP nor with CERCLA. The Region further concludes that United Nuclear Corporation, El Paso Natural Gas Corporation, Homestake Mining Company, and Western Energy Development Corporation are the appropriate parties under CERCLA to receive this order. The Region has also confirmed that the Southwestern Regional Office of the USFS has coordinated with the New Mexico Environment Department, the Bureau of Indian Affairs, the U.S. Department of the Interior, the U.S.

Department of Energy, and has met all other requirements of Executive Order 13016 and the implementing Memorandum of Understanding.

J. Recommendation

Based on the foregoing analysis and the factual materials contained in the USDA briefing package, the Region supports the issuance of the proposed order by the Southwestern Regional Office of the USFS to United Nuclear Corporation, El Paso Natural Gas Corporation, Homestake Mining Company, and Western Energy Development Corporation, and recommends that you concur in its issuance.

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PRICE	MEYER	STENGER	RINEHART	for WEBSTER	for BROYLES
6SF-TR	6SF-TR	6SF-T	6SF-PR	6SF-PR	6SF-P
5/16/11		05/18/11	5-19-11	5/27/11	5/27/11

PEYCKE	PHILLIPS
6RC-S	6SF-D
05/31/11	5/13/11